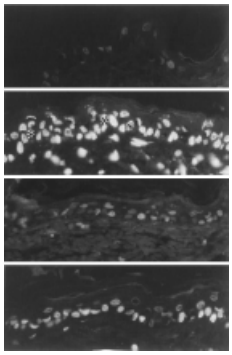
# Clinical Snippets

Lowell A. Goldsmith

## BUILD BETTER MITE TRAPS

The urbanized areas of the world have high levels of both atopic dermatitis and asthma, and the incidence of both disorders is increasing. The dust mite has been implicated in both diseases since the dust mite and mite feces are abundant in slums and inner cites. Chua and colleagues (p. 289) have sensitized mice to dust mites and produced skin lesions resembling atopic dermatitis. Increased substance p and CGRP (Calcitonin gene related peptide) suggested the lesions were related to "neurogenic inflammation". Keep building better mite traps.

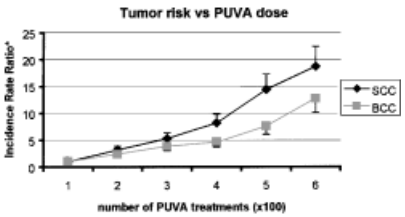
## CHEMISTRY COUNTS



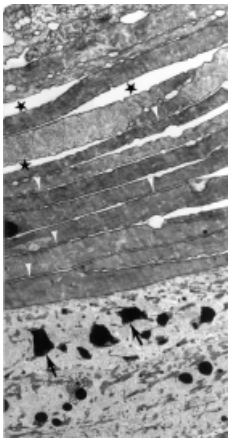
Topical α-tocopherol-6-O-phosphate protects more effectively against UVB than alpha-tocopherol acetate, a common ingredient in skin care products. Both compounds penetrated skin equally, but only the α-tocpherol-6-O-phosphate was converted to α-tocopherol, as reported by Kobayashi and coworkers (p. 406). This preparation may be a new topical antioxidant for both cosmetics and drugs.

## GOOD STUDIES NEVER STOP

Long-term follow-up of the original PUVA cohort more than 25 years after the first patients started is reported by Stern and colleagues (p. 252). The levels of PUVA exposure were the most significant predictor of squamous cell or basal cell carcinomas. Even 15 years after stopping PUVA, the risk of squamous cell carcinoma was not decreased, suggesting that PUVA related mutations remain in the epidermis.




## DEAD, BUT STILL FUNCTIONING



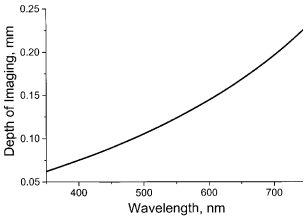
What keeps us in and keeps noxious agents and molecules out of the body is the dead, but exquisitely functioning stratum corneum. Madison (p. 231) comprehensively reviews the structure and chemistry of this natural composite biomaterial which sustains terrestrial life.

Bioengineering aims to mimic stratum corneum function for those lacking a barrier. Gene array studies of Andreadis and coworkers (p. 368) show changes resulting from acetone related damage in engineered skin equivalents similar to those found in intact skin treated with lipid solvents. The goal of these laboratory produced tissues will be both in the clinic and for toxicology testing.

## INDIVIDUALIZED THERAPIES

Patients respond differently to medical and physical modalities such as ultraviolet irradiation (UVR). Several liver and skin enzymes, which metabolize drugs and oxidative intermediates, were quantitated by Ibbotson and colleagues (p. 390). Some enzymes are more active and inducible in psoriatic plaques than others. There was a wide variation in the degree of inducibility of some of these enzymes. How such variation may determine therapeutic responsiveness is an essential study.

## BRING ON THE MACHINES




Russman's Universal Robots (RUR, Karel Capek, 1920) presages bioengineered machines doing more and more human tasks. *In vivo* determination of skin tumor margins is a frontier in all forms of tumor surgery – especially skin cancer therapy – and is a necessary step before the automation of tumor therapy. In the study reported by Anderson and coworkers, multispectral polarized light enhanced images and was relatively sensitive and specific compared with Mohs surgery (the "gold standard") (p. 259). With further enhancements, thesetechniques will encourage the development of robotic surgery for skin tumor surgeries. Already used for some brain surgeries, surgical robots of the future may be guided by the optical images of the *in vivo* tumor. Luddites awake!

## GENES ARE THE BEGINNING

The same molecular defect can be associated with inter- and intrafamilial differences in the ultimate phenotype. Bodemer and colleagues (p. 273) studied three affected brothers with the dramatic phenotype of recessive dystrophic epidermolysis bullosa due to collagen 7. The more severely affected patients had increased levels of epidermal collagenase, gelatinase 1 and 3, stromolysin and decreased levels of the tissue inhibitor of metalloproteinases (TMP 1 and 2). This association deserves study in similar families. The study was presaged by those of Lazarus, Bauer and Eisen in the 1970s. It shows how specific genes may be necessary for a disease, but by themselves can only explain part of a complex phenotype.